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Analytic Philosophy and History of Philosophy: The Development of the Idea of Rational Reconstruction

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1 Introduction

Analytic philosophy has had an uneasy relationship with the discipline of history of philosophy[1] throughout its life. Analytic philosophers often either scorn or simply ignore history of philosophy. Where interpretations have been offered of past philosophical works, in what we can call 'analytic' history of philosophy, they have tended to be 'rational reconstructions'. In recent years, however, philosophers trained in the analytic tradition have begun to look at the history of analytic philosophy itself more seriously, and the debate about the relationship between philosophy and history of philosophy has been brought closer to home. In this paper I consider some of the philosophical and historiographical presuppositions and implications of this debate, focusing on the idea of rational reconstruction. This idea developed alongside analytic philosophy itself and holds the key to understanding one central thread in the history of the relationship between analytic philosophy and history of philosophy.

1.1 Two caricatures

As a subdiscipline of philosophy, history of philosophy has often been derided by analytic philosophers, and at a crude level, it is easy to see why. For if analytic philosophers ('real philosophers') are concerned with substantive philosophical questions, such as 'What is meaning?', 'What is truth?' or 'What is virtue?', then historians of philosophy seem only to be concerned with what particular (usually long dead) philosophers have thought about them in the past. If historians of philosophy are interested in these questions, then their interest seems curiously indirect and vicarious, as if they were unable to work things out for themselves,[2] and they seem

[1] In what follows, I use 'history of philosophy' to denote the discipline of history of philosophy and 'the history of philosophy' to denote the actual history of philosophy.

[2] Cf. John Searle's remark, as reported by Glock (2008, p. 211): "I am an analytic philosopher. I think for myself."

surprisingly reluctant to bring themselves up to date on the issues. It may be useful to find out what previous philosophers thought as a preliminary to 'real work'; but the aim is always to think through something for oneself and present it as clearly as possible. History of philosophy, on this view, is subordinate to analytic philosophy. It also seems methodologically flawed, for we must first have a reasonably clear conception of what, say, 'meaning', 'truth' or 'virtue' means, before we can make sense of what past philosophers have thought. History of philosophy appears to presuppose grasp of fundamental concepts, the analysis of which is the task of analytic philosophy, a task that can be undertaken independently of history of philosophy. Here the analogy with history of science or history of art is frequently drawn. Just as the scientist does not need to study the history of science in order to carry out research, or the artist can produce original work without knowledge of the history of art, so too the 'real philosopher' needs no knowledge of the history of the subject to clarify philosophical concepts.

From the point of view of the historian of philosophy, on the other hand, analytic philosophy might be seen as subordinate to history of philosophy. Analytic philosophy is itself an historical tradition, which just happens to be dominant now. To assume that it embodies the state of the art simply because it is now dominant begs precisely the questions that need to be investigated by studying previous traditions. In fact, its unity and coherence are by no means as clear as some have assumed. The apparent fragmentation of the analytic tradition, and the growing self-consciousness amongst its practitioners as to its nature and foundations, only reinforces the need for history of philosophy. On the methodological level too, there is a powerful objection raised by the historian of philosophy to the analytic philosopher. Since the concepts we use, whose analysis is supposedly the concern of the analytic philosopher, have been shaped by our predecessors, and our thought only has its significance in the context of the work of others, we must understand our past to properly understand our concepts. It is widely accepted that the concept of virtue has changed over time, but so too have the concepts of meaning and truth, which the analytic philosopher frequently treats as timeless.[3] So analytic philosophy depends on history of philosophy.

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[3] For the classic account of the history of the virtues, see MacIntyre 1981. I focused on the way that Frege developed the notion of sense in Beaney 1996. The historicity of conceptions of truth is well explored in Campbell 1992.

1.2 Dissolving the dilemma

Both these accounts are caricatures, but aspects of them can be found in contemporary views. The dilemma that they pose is spurious, but the relationship between analytic philosophy and history of philosophy is all too rarely considered.[4] There are many things to say in repudiating the caricatures and dissolving the dilemma. What I want to focus on in this paper is the role played by the idea of rational reconstruction. This idea emerged explicitly in analytic philosophy in the 1920s and 1930s, though its roots go back earlier: to neo-Kantianism and logicism. I shall outline these roots in section 2, and explain its explicit emergence in section 3. The idea influenced a whole generation of subsequent analytic philosophers. The story here is complex and I can do no more, in section 4, than select three highlights: a paper each by Quine, Lakatos and Rorty. In section 5 I consider some actual examples of rational reconstructions in analytic history of philosophy, before offering an assessment, in the final section, of how we should see rational reconstruction in attaining a healthy view of the relationship between analytic philosophy and history of philosophy.

2 The Roots of Rational Reconstruction

The idea of rational reconstruction has two main roots: in neo-Kantianism and in the logicism of early analytic philosophy. I shall say something briefly about each in turn.

2.1 Neo-Kantianism

Central to neo-Kantianism was the distinction between discovery and justification – or between genesis (*Genese*) and validity (*Geltung* or *Gültigkeit*), to adopt the terms used by Hermann Lotze. This distinction goes back (at least) to Kant's distinction between *quid facti* and *quid juris* questions – questions of fact and questions about legal entitlement – which he drew in motivating his Transcendental Deduction in the first *Critique* (cf. A84/B116). This was connected with his anti-psychologism, or at least

[4] A recent exception is Sorell and Rogers (2005). Despite its title, however, all the contributors are scholars of early modern philosophy, and there is no discussion, let alone a paper, on the history of analytic philosophy. To be sure, many of the issues concerning the relationship between analytic philosophy and history of philosophy can be explored with reference to early modern philosophy; but it was a lost opportunity not to have considered analytic philosophy's own history. Most of the papers make useful contributions to the debate, however, especially the excellent paper by Gary Hatfield.

those anti-psychologistic features of his philosophy that came to be emphasized and elaborated in neo-Kantianism. In his account of pure logic in the *Critique*, for example, Kant writes that "it has no empirical principles, thus it draws nothing from psychology" (A54/B78); and in the *Jäsche Logic*, he states that "the question is not about … how we do think, but how we ought to think".[5]

Both anti-psychologism and the distinction between discovery and justification can be found asserted by many German philosophers writing after Kant, not just those who are generally classified now as 'neo-Kantian'. J. F. Herbart, for example, wrote: "In logic it is necessary to ignore everything psychological, because here proof is required only of those forms of possible connections of thought which the nature of thought itself allows" (1813, §34). Lotze is also a pivotal figure in the transition from Kant to neo-Kantianism. Anti-psychologism is as key a feature of his thought as the distinction between genesis and validity just mentioned.[6] It is in the work of the neo-Kantians who came after him, however, that the two ideas come together in an especially powerful form. Building on Lotze's conception of validity, Wilhelm Windelband and Heinrich Rickert developed a whole theory of value, which became a distinguishing feature of the Southwest (or Baden) School of neo-Kantianism. Underlying this is the distinction Windelband drew between the 'genetic method', concerned to explain the psychological origin of our beliefs, and the 'critical method', concerned to validate the normative structure of our knowledge.[7]

Windelband was himself influenced by Hermann Cohen, the founder of the Marburg School, the other main branch of neo-Kantianism. It was Cohen, in particular, who attempted to sift out what he saw as the legitimate anti-psychologistic from the illegitimate psychologistic elements of Kant's philosophy. Kant's talk of the a priori structures of experience easily lent itself to psychological construal, mental processes being seen as conditioning experience and apriority being understood as innateness. Cohen criticized this naturalizing tendency and sought to purify Kant's philosophy accordingly. Kant's theory of cognition – *Erkenntnistheorie* – was interpreted as an epistemological theory concerned with the validity of knowledge

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[5] Tr. in Kant 1992, p. 529; cf. p. 13 (in the *Blomberg Logic*).

[6] See e.g. Lotze 1843, pp. 8-9. For Lotze's influence on analytic philosophy, see Sluga 1980, esp. pp. 52-8; Gabriel 2002.

[7] See esp. Windelband 1884. On Windelband's influence on Frege, see Gabriel forthcoming.

rather than as a psychological theory concerned with its genesis.[8]

The distinction between the genetic method and the critical method – between discovery and justification – became a fundamental tenet not only of neo-Kantians of the Southwest and Marburg Schools but also of many later philosophers. There were variations, of course, and different attitudes to the two methods. The positivist Theodor Ziehen, for example, writing on the state of epistemology in 1914, distinguished the genetic method, which he saw as characteristic of positivism, from what he called the 'reconstructive method', the method of neo-Kantianism.[9] In neo-Kantianism, mathematics and (mathematized) natural science were seen as 'reconstructive' in their projects of 'rationalizing' experience. All reconstruction, Jonas Cohn wrote in 1908, is "partial rationalization".[10] The term 'rational reconstruction' does not yet seem to have been used, but the stage was set.

2.2 Logicism

Analytic philosophy has its origins, to single out the two most important events, in the creation and use of quantificational logic by Gottlob Frege and the rebellion of Bertrand Russell and G. E. Moore against British idealism. Central to the work of both Frege and Russell was their concern to demonstrate logicism – the thesis that mathematics (just arithmetic, in the case of Frege) can be reduced to logic; and it is in this project that we find a further source of the idea of rational reconstruction as it developed in the analytic tradition.

Fundamental to Frege's and Russell's logicism is the definition of the natural numbers as equivalence classes of classes (extensions of concepts). In Frege's *Grundlagen* of 1884, for example, the number 0 is defined as follows:

(E0) The number 0 is the extension of the concept 'equinumerous to the concept *not identical with itself*'.[11]

Frege shows how the concept of equinumerosity (*Gleichzahligkeit*) can be defined logically (in terms of one-one correlation), and on the assumption that the concept of

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[8] For a fuller account of Cohen's neo-Kantianism, to which I am indebted here, see Anderson 2005, §3.

[9] Cf. Richardson 2006, pp. 681-2.

[10] Cohn 1908, p. 342. Cf. Richardson 2006, p. 682.

[11] For details of Frege's argument for this, see my editorial material in Frege 1997, pp. 116-20.

an extension of a concept is also a logical concept, Frege's logicist project at least looks feasible. As Frege recognized at the time, however, objections might well be raised to such a definition. "For is an extension of a concept not thought to be something different [from a number]?" (1884, §69) Frege admits that we do not say, for example, that one number is more inclusive than another in the way that we do of extensions of concepts; but he suggests, in response, that there is nothing to stop us doing so if we want (*ibid*.).

What underpins this response is his view that there are equivalences between statements about numbers and corresponding statements about extensions of concepts. In particular, he notes that the following two propositions are equivalent (in the sense that one is true if and only if the other is true):

(Nb) The number of *F*s is equal to the number of *G*s.

(Nd) The extension of the concept 'equinumerous to the concept *F*' is equal to the extension of the concept 'equinumerous to the concept *G*'. (Cf. 1884, §69)

The equivalence here can be seen more clearly if we note also the equivalence between (Nb) and the following:

(Na) The concept *F* is equinumerous to the concept *G* (i.e., the objects falling under concept *F* can be correlated one–one with the objects falling under concept *G*).

That (Na) and (Nb) are equivalent is the content of the Cantor–Hume Principle,[12] which plays a fundamental role in Frege's logicism. (Na) and (Nd) are also equivalent,[13] from which it follows, by the Cantor–Hume Principle, that (Nb) and (Nd) are equivalent. If this is right, then it would seem that every identity statement concerning numbers, if given in the form of (Nb), can be transformed into a corresponding identity statement concerning extensions of concepts.

Now the details of Frege's logicism need not concern us here.[14] What is important is the governing idea that number statements can be transformed into corresponding statements about extensions of concepts. With the benefit of terminological (or conceptual) hindsight, it seems most natural to describe what Frege

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[12] This is now often called 'Hume's Principle', but for reasons of historical justice it is best referred to as the 'Cantor-Hume Principle'. Cf. Beaney 2005b, p. 307, n.4.

[13] Cf. Frege 1884, §68. For discussion of the equivalences here, see Beaney 1996, §5.3.

[14] I offer an account in Beaney 1996, ch. 4; 2005a.

is doing as 'rational reconstruction'. The logicist project involves systematically rebuilding arithmetic on logical foundations. Numbers, we might say, are reconceived as extensions of concepts. Frege himself, however, uses the term 'reduction' rather than 'reconstruction', which arguably suggests more of a realist predilection.[15] Extensions of concepts are already 'out there' (in Frege's 'third realm', as he later comes to refer to the realm of abstract objects; 1918); all that needs to be done is to specify which of these are the natural numbers.

Alongside this realism, however, is recognition of the philosophical work that needs to be done *prior* to logical construction. It is not just a matter of specifying the relevant objects and concepts, in introducing the primitive terms, and then getting on with the constructive task. The ground has to be prepared properly, by clearing it of mistaken views and somehow ensuring that the basic concepts are grasped. Frege called this preliminary work 'elucidation',[16] and in recent years there has been growing appreciation of its significance.[17] This makes 'reconstruction' a more appropriate term than just 'construction' in describing Frege's logicist project.

Anti-psychologism was also fundamental to Frege's philosophy. The principle that "There must be a sharp separation of the psychological from the logical, the subjective from the objective" is the first of the three principles he lays down in the introduction to the *Grundlagen* (p. X), and he never repudiates this principle. It underlies his remarks in the passage that sums up his view of the place of historical investigations in mathematical and philosophical work:

> The historical mode of investigation, which seeks to trace the development of things from which to understand their nature, is certainly legitimate; but it also has its limitations. If everything were in continual flux and nothing remained fixed and eternal, then knowledge of the world would cease to be possible and everything would be thrown into confusion. We imagine, it seems, that concepts originate in the individual mind like leaves on a tree, and we suppose that their nature can be understood by investigating their origin and seeking to explain them psychologically through the working of the human mind. But this conception makes everything subjective, and taken to its logical conclusion, abolishes truth. What is called the history of concepts is really either a history of our knowledge of concepts or of the meanings of words. Often it is only through enormous intellectual work, which can last for hundreds of years, that knowledge of a concept in its purity is achieved, by peeling off the alien clothing that conceals it from the mind's eye. (1884, p. VII/1997, p. 88)

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[15] See e.g. 1893, 'Introduction', pp. 1, 3 (the German verbs used are 'ableiten' and 'zurückführen').

[16] See esp. the passage from 'Logic in Mathematics' tr. in Frege 1997, pp. 313-14.

[17] See e.g. Weiner 1990, ch. 6; 2005; Conant 2002; Beaney 2006a. Cf. also Reck 2005; 2007.

Frege allows that historical investigations may play a preliminary role, however, and in fact, in the first three parts of the *Grundlagen*, he presents the results of his own historical investigations. He discusses the views, for example, of Euclid, Descartes, Hobbes, Newton, Locke, Leibniz, Berkeley, Hume, Kant, and Mill. I have called what Frege does here 'historical elucidation' (2006a), since it plays an essential role in motivating his own conception, by clearing the ground of mistaken views, and identifying aspects of our concept of number – such as its applicability to the whole domain of what is conceptual (and not merely what is spatio-temporal) – that need to be captured in an adequate account. Frege may be right that we do not typically discover concepts in all their purity in the earliest stages of human development, but that does not mean that historical investigation is not required in achieving a clear grasp of the requisite concepts.

After his rebellion against British idealism at the end of the nineteenth century, Russell was also concerned to demonstrate that arithmetic was reducible to logic. He followed Frege in defining numbers as classes. But in response to the paradox he discovered in Frege's system in 1902, Russell's own approach was more complex, both technically and philosophically.[18] He developed his theory of types to avoid the paradox, and introduced his theory of descriptions to 'analyse away' talk of classes, allowing such talk to be meaningful without having to suppose that classes exist. His approach here was generalized into the method of logical construction, in accord with what Russell called 'the supreme maxim in scientific philosophizing': "*Wherever possible, logical constructions are to be substituted for inferred entities*" (1914, p. 115). The method was applied elsewhere, such as in his work on the analysis of matter (1927), and influenced subsequent philosophers such as John Wisdom and Rudolf Carnap.[19] Russell, too, did not talk of 'rational reconstruction', although this might well seem to us now to be an appropriate term to describe his theoretical projects.[20]

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[18] For an account of the relationship between Frege's and Russell's logicism, see Beaney 2005a.

[19] For further discussion of all this, see, for example, Hylton 1990, the relevant essays in Griffin 2003, and on the method of logical construction, Linsky 2007; forthcoming.

[20] Russell's attitude to psychologism is more complicated, and changed over time. For discussion, see Hatfield ([this volume]). In focusing on psychologism, Hatfield's paper can be regarded as complementing the present paper.

3 The Explicit Emergence of the Idea of Rational Reconstruction

As far as I know, the first use of the term 'rational reconstruction' to denote a philosophical method occurs in Rudolf Carnap's first major work, *Der logische Aufbau der Welt*, published in 1928. Carnap's own term was 'rationale Nachkonstruktion', but this was rendered as 'rational reconstruction' when an English translation of the book eventually appeared in 1967. By then the term, in both German and English, was well established. Karl Popper and Hans Reichenbach, in books written in the 1930s, for example, use the term, and Reichenbach explicitly credits its first use to Carnap. I explain these uses in the present section.

3.1 Carnap's idea of rational reconstruction in *Der logische Aufbau der Welt*

The aim of Carnap's *Aufbau* was to develop what he called a 'constructional system' ('Konstitutionssystem'), showing how all our concepts can be organized into a structured system based on a few fundamental concepts (§1). Central to the project was the idea of reducibility: "An object (or concept) is said to be *reducible* to one or more other objects if all statements about it can be transformed into statements about these other objects" (§2). The paradigm of reduction that Carnap had in mind was the work on the foundations of mathematics that had culminated in the logicist project of Frege and Russell.[21] A *constructional system* was then characterized as a hierarchical ordering of objects, with the basic objects at the lowest level and all other objects constructed from them. (*Ibid*.) Despite this initial talk of 'construction' and 'constructional system', however, the term 'rational reconstruction' is not itself used until §81, when Carnap is explaining his method in more detail. The term appears five more times in §§ 98-102, and two cognate phrases are also used.[22] These uses are sufficient, though, to determine what Carnap meant.

Influenced by both neo-Kantianism and Gestalt psychology, Carnap held that the fundamental units of experience were not the qualities (e.g. colours or shapes) as

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[21] As his 'Intellectual Autobiography' (1963) makes clear, Carnap was profoundly influenced by both Frege and Russell. He had attended three of Frege's lecture courses at Jena, two on Frege's new logic and one on 'Logic in Mathematics'; see Frege 2004. For discussion of this influence, see Beaney 2004. I draw on the latter in the account of Carnap's views offered in what follows.

[22] For the record, Carnap uses the term 'rationalising reconstruction' ('rationalisierende Nachkonstruktion') in §94 and the verb 'rational reconstruct' ('rational nachkonstruieren') in §143.

perceived in individual experiences (e.g. seeing a physical object), but those experiences themselves, taken as indivisible wholes. Since these elementary experiences ('Elementarerlebnisse') are indivisible, however, they cannot be 'analysed' to get at the qualities involved. Instead, according to Carnap, these qualities must be 'constructed' by what he called 'quasi-analysis', which is analogous to analysis but which yields 'quasi-constituents' rather than constituents.

Carnap's method of quasi-analysis is essentially the method of contextual definition or logical abstraction that Frege had introduced in the *Grundlagen*. Consider the Cantor–Hume Principle, asserting the equivalence between (Na) and (Nb), as formulated in §2.2 above. Here we have an equivalence relation holding between things of one kind (concepts) being used to define – or 'construct', as Carnap would put it – things of another kind (numbers). Numbers are not *constituents* of the concepts to which they are ascribed, but are constructed from the appropriate equivalence relation. Taking the case of colour, then, consider the following (seemingly trivial) analogous contextual definition:

(Fa) Object *X* is equicoloured to (has the same colour as) object *Y*.

(Fb) The colour of *X* is the same as the colour of *Y*.

Accepting such a definition as unproblematic,[23] and given that being 'equicoloured' is an equivalence relation, we can then proceed to form the equivalence classes (the set of objects related to one another by the relevant relation), by means of which the individual colours can be (structurally) defined.

Carnap applies this method to constructing the quasi-constituents of (i.e., abstracting them from) elementary experiences, taking as basic not an equivalence relation but a similarity relation – the relation of similarity of recollection – to form what he calls 'similarity circles' and 'quality classes'. The details need not concern us. What is relevant here is that it is in this context that we find Carnap's first use of the term 'rational reconstruction'. He writes: "In constructing similarity circles and quality classes, we must pay especial attention to the fact that the construction does not have to reflect the actual process of cognition, but that it is only a rational

[23] The issue is complicated by the fact that Carnap takes the case of colour, which he actually thinks of as a property rather than 'quasi-property' of an object, to illustrate quasi-analysis, although analysis and quasi-analysis are seen as analogous. I discuss this complication in Beaney 2004, §5, and ignore it here.

reconstruction which must lead to the same result" (1928, §81).

The idea here receives its fullest account in §100, entitled 'Construction as Rational Reconstruction'. Carnap begins by noting that "The "given" is never found in consciousness as mere raw material", but is always synthesised unconsciously. He gives the examples of perceiving a house, which we do "immediately and intuitively", and of a botanist's recognizing a plant of a particular species. The synthesis of cognition, he writes, generally takes place intuitively, which has the advantage of "ease, speed, and obviousness". But to understand such cognitive processes, and for scientific purposes, such "intuition" needs to be "rationally justified". It is not enough that the botanist can simply recognize the species of plants, for example; the essential characteristics of each species need to be identified. It is here that 'rational reconstruction' comes in, to abstract out the qualities that are merely intuitively apprehended. "The constructional system is a rational reconstruction of the entire formation of reality, which, in cognition, is carried out for the most part intuitively."

Returning to the example of colour, the basic idea is this. In everyday life I experience colours: I recognize colours, I describe things as coloured, I compare and make judgements about colours, and so on, much of it 'intuitively'. Perhaps there is a 'phenomenal feel' to an individual experience, and in looking at a coloured object, there may be all sorts of other aspects to my experience than just its coloured aspect. But for scientific purposes, we need to abstract from all these other aspects. This is where quasi-analysis comes in. Assume that someone calls something 'red'. We do not know what they mean by 'red' until we see the kinds of judgements they make in calling this object similar to that object, and so on. From a list of such judgements of similarity we can form similarity classes, and then define something as 'red' if it is a member of the relevant similarity class. Generalizing (and ignoring the various difficulties that such a strategy actually faces),[24] our experiences can thus be ordered by means of their structural relations. We abstract from the subjective content of experiences and rationally reconstruct in accord with their logical relations.[25]

Carnap may not have introduced the term 'rational reconstruction' until §81 of the *Aufbau*, then, but it offered a succinct way of encapsulating his method. From the

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[24] The difficulties have been extensively discussed in the literature. For a recent account, see Richardson 1998, chs. 2-3.

[25] Cf. the summary Carnap provides of §100 of the *Aufbau*; 1967, p. 171.

associated talk of 'synthesis of cognition', we can detect the neo-Kantian influence, but the idea is clearly rooted in his conception of a constructional system, which also shows the influence of Frege's and Russell's logicism. So both influences come together in this key idea of rational reconstruction. Certainly, by 1961, when Carnap wrote the preface to the second edition of the *Aufbau*, the idea is at the centre of his thinking. After noting that he would no longer put things in the same way, he nevertheless endorses the essential method:

> The main problem concerns the possibility of the rational reconstruction of the concepts of all fields of knowledge on the basis of concepts that refer to the immediately given. By rational reconstruction is here meant the searching out of new definitions for old concepts. The old concepts did not ordinarily originate by way of deliberate formulation, but in more or less unreflected and spontaneous development. The new definitions should be superior to the old in clarity and exactness, and, above all, should fit into a systematic structure of concepts. Such a clarification of concepts, nowadays frequently called "explication", still seems to me one of the most important tasks of philosophy, especially if it is concerned with the main categories of human thought. (1967, p. v)

There is room for dispute about the extent to which 'explication' means the same as 'rational reconstruction'. The project of explication arguably owes more to logicism than to neo-Kantianism, albeit refined in the aftermath of Carnap's endorsement of the principle of toleration in the *Logical Syntax* of 1934.[26] But there is a common methodological core, which Carnap highlights here: redefining our old concepts and systematizing them to make clear their logical relations. At the root of both, too, was rejection of psychologism. This comes out clearly in his 'Intellectual Autobiography' of 1963. In describing his *Aufbau* project, he writes:

> Although I was guided in my procedure by the psychological facts concerning the formation of concepts of material things out of perceptions, my real aim was not the description of this genetic process, but rather its rational reconstruction – i.e., a schematized description of an imaginary procedure, consisting of rationally prescribed steps, which would lead to essentially the same results as the actual psychological process. (1963, p. 16)

As we will see, this rejection of psychologism was shared by both Popper and Reichenbach, writing in the decade that followed the publication of the *Aufbau*.

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[26] For discussion of Carnap's conception of explication, see Beaney 2004; Carus 2007.

3.2 Popper's anti-psychologism in *Logik der Forschung*

Logik der Forschung was Karl Popper's first book, published in 1934 (and in English translation as *The Logic of Scientific Discovery* in 1959). His concern was to give a logical analysis of the growth of scientific knowledge, which he saw as the key problem of epistemology. He rejected inductivism, according to which universal statements such as hypotheses or theories are verified in proportion to the number of singular statements that confirm them. Instead, he argued, we should be deductivists: science proceeds by formulating bold hypotheses or theories, the consequences of which are then drawn out with a view to falsifying them.

The main features of Popper's falsificationism are well known. All I want to highlight here is his endorsement of anti-psychologism, on which he agreed with the logical empiricists, and his mention of 'rational reconstruction' in doing so. In §2, entitled 'Elimination of Psychologism', he writes:

> Some might object that it would be more to the purpose to regard it as the business of epistemology to produce what has been called a '*rational reconstruction*' of the steps that have led the scientist to a discovery—to the finding of some new truth. But the question is: what, precisely, do we want to reconstruct? If it is the processes involved in the stimulation and release of an inspiration which are to be reconstructed, then I should refuse to take it as the task of the logic of knowledge. Such processes are the concern of empirical psychology but hardly of logic. It is another matter if we want to reconstruct rationally the *subsequent tests* whereby the inspiration may be discovered to be a discovery, or become known to be knowledge. In so far as the scientist critically judges, alters, or rejects his own inspiration we may, if we like, regard the methodological analysis undertaken here as a kind of 'rational reconstruction' of the corresponding thought-processes. But this reconstruction would not describe these processes as they actually happen: it can give only a logical skeleton of the procedure of testing. Still, this is perhaps all that is meant by those who speak of a 'rational recontruction' of the ways in which we gain knowledge. (1959, p. 31)

Popper presumably has in mind here Carnap's *Aufbau*, where there is indeed talk of rational reconstruction of a *process*. The idea of rational reconstruction clearly lends itself to application to the history of thought, where a distinction can also be drawn between the actual process by which an idea or theory was developed and a "schematized description of an imaginary procedure, consisting of rationally prescribed steps, which would lead to essentially the same results", to use Carnap's words. Since Popper thinks that processes are of no concern at all to logic, however, he is reluctant to endorse the idea, suggesting that he holds an even more robust anti-psychologism. As he goes on to say, his own view "is that there is no such thing as a

logical method of having new ideas, or a logical reconstruction of this process"; every discovery, he writes, contains "an irrational element" or "a creative intuition" (1959, p. 32). This is the crucial point for Popper. Despite the English title of his book, there is no logic of *discovery*. There may be a logic of *research* (*Forschung*), but this is a logic of justification, operating through the deductive and falsificationist methods that drive scientific progress, according to Popper. We will return to this in §4.2, where we will see how the idea of rational reconstruction did indeed come to be applied in history of science, quite explicitly, in the work of Lakatos.

3.3 Reichenbach's distinction of contexts in *Experience and Prediction*

Hans Reichenbach reviewed Popper's *Logik der Forschung* in 1935, and defended his own inductivist views more fully in *Experience and Prediction*, which was published in 1938. I shall simply note here what he says about rational reconstruction in the first section, in distinguishing between epistemology and psychology, and the distinction he draws between the context of discovery and the context of justification. He writes:

> Epistemology does not regard the processes of thinking in their actual occurrence; this task is entirely left to psychology. What epistemology intends is to construct thinking processes in a way in which they ought to occur if they are to be ranged in a consistent system; or to construct justifiable sets of operations which can be intercalated between the starting-point and the issue of thought-processes, replacing the real intermediate links. Epistemology thus considers a logical substitute rather than real processes. For this logical substitute the term *rational reconstruction* has been introduced; it seems an appropriate phrase to indicate the task of epistemology in its specific difference from the task of psychology. (1938, pp. 5-6)

Reichenbach adds a footnote here, stating that the term 'rationale Nachkonstruktion' was used by Carnap in the *Aufbau*. His endorsement of Carnap's idea is thus clear, rooted in a shared rejection of psychologism. He continues:

> If a more convenient determination of this concept of rational reconstruction is wanted, we might say that it corresponds to the form in which thinking processes are communicated to other persons instead of the form in which they are subjectively performed. … I shall introduce the terms *context of discovery* and *context of justification* to mark this distinction. Then we have to say that epistemology is only occupied in constructing the context of justification. (1938, pp. 6-7)

Reichenbach's distinction between the context of discovery and the context of justification has been a familiar theme in history and philosophy of science ever since. It clearly echoes the neo-Kantian distinction between discovery and justification,

however, so it is far from new. It has been suggested that Reichenbach did not always maintain the distinction, and that what he meant by 'discovery' was not so much the search for hypotheses and theories as the search for the rational (deductive and inductive) relations between theories and facts.[27] Be that as it may, just like Popper, Reichenbach said very little about issues of discovery, and these were only taken up properly in the 1960s and 1970s.

4 Criticisms and Further Developments of the Idea of Rational Reconstruction

Logical empiricism and the scientific philosophy it inspired originated in Germany and Austria in the 1920s, although there are roots in earlier thought, as we have seen. With the growth of Nazism in the 1930s, however, most of its proponents emigrated, especially to the United States. Reichenbach went to Los Angeles via Istanbul, and Carnap to Chicago and from there to Los Angeles, for example, while Popper went to London after spending the war years in New Zealand. As we have seen, all three rejected psychologism and distinguished between discovery and justification, the main aim being to relegate questions of discovery to empirical psychology so that they could focus on questions of justification, pursued through rational reconstructions. Their ideas influenced a whole generation of philosophers, working in the analytic tradition that they helped promote. As those ideas were discussed, however, more and more problems became apparent and further developments occurred. In this section I shall highlight three key moments in this later history, focusing on a paper each by W. V. Quine, Imre Lakatos, and Richard Rorty.

4.1 Quine's critique of Carnap's idea of rational reconstruction

Quine's critique, in 'Two Dogmas of Empiricism' (1953), of Carnap's distinction between analytic and synthetic truths is well known.[28] I shall briefly look here at a later paper, 'Epistemology Naturalized' (1968), where Quine criticizes Carnap's idea of rational reconstruction in the context of a psychologistic reconception of epistemology. Quine identifies Carnap's *Aufbau* project as the one that came closest

[27] Cf. Glymour and Eberhardt 2008, §3.

[28] For a recent account, see Hylton 2007, ch. 2.

to deriving knowledge from sense experience, but he raises two objections to it. The first may be stated as follows. If the aim is to derive psychology – together with the rest of science – from sense experience, then appealing to psychology itself in doing so would be circular; so empirical psychology must be set aside in such foundationalist projects. If the foundationalist aim is abandoned, on the other hand, then the way is open to make use of psychology – along with any other science – in explaining how we acquire scientific knowledge (cf. pp. 75-6).

Now we might agree that if we abandon foundationalism while remaining committed to empiricism, then we should make use of whatever empirical science helps us in explaining the knowledge we have. But the antecedent here makes major assumptions, and we might well feel that Quine has missed the point of rational reconstruction. He goes on, however, to acknowledge a different reason for pursuing rational reconstruction: "We should like to be able to *translate* science into logic and observation terms and set theory. This would be a great epistemological achievement, for it would show all the rest of the concepts of science to be theoretically superfluous." (p. 76) He then points out, however, that Carnap did not succeed in giving translational reductions in the *Aufbau*, and was later led to weaken his reductionism, demanding merely implications rather than equivalences (pp. 76-7). And once we do this, Quine argues, we have lost the advantage of translational reduction, namely, its eliminativism. "If all we hope for is a reconstruction that links science to experience in explicit ways short of translation, then it would seem more sensible to settle for psychology. Better to discover how science is in fact developed and learned than to fabricate a fictitious structure to a similar effect." (p. 78)

As I see it, Quine raises a dilemma here for any project of rational reconstruction. Either rational reconstruction aims to provide translational equivalents, or it does not. If it does, then all well and good; but no attempts have yet been successful. If it does not, then there will always be something to explain, in which case appeal will need to be made to actual history (or psychological genesis). But if such appeal is needed, then why not seek to explain the actual history in the first place? This argument clearly motivates Quine's backlash against the anti-psychologism of his predecessors; but it is interesting when set in the wider context of Quine's work. For Quine was in some ways even more Russellian than Carnap – in the emphasis he placed on regimenting theories to display their ontological

commitments.[29] This, too, counts as a form of rational reconstruction; but it is clear that Quine understands Carnap's idea epistemologically, not ontologically. Certainly, if we think of Carnap as answering the (neo-)Kantian question 'How is knowledge possible?', then one can see how an empiricist like Quine regards an explanation of how it actually occurs as better than a mere 'rational reconstruction'.

Despite Quine's critique of Carnap, then, it would be wrong to see Quine as repudiating rational reconstruction altogether. He continues to endorse its use in arguing, for example, that regimentation into first-order logic shows that we do not need to posit the existence of attributes.[30] To this extent he is as much the heir of Frege and Russell as Carnap, and indeed, is the key transmitter of an idea that continues to be important in analytic philosophy today. Pursuing this further here, however, would lead us away from the central aim of this paper, which is to trace the development of the idea of rational reconstruction into the disciplines of history of science and history of philosophy. With this in mind it is to Lakatos that we must now turn.

4.2 Lakatos' idea of rational reconstruction in history of science

In 1971 Lakatos published a paper entitled 'History of science and its rational reconstructions', which shows the extent to which the term 'rational reconstruction' had caught on in history of science. Despite Popper's own hesitance in using the term, Lakatos has no qualms in seeing Popper's falsificationism as offering a rational reconstruction of scientific progress, and criticizing him for the form it took. Although Lakatos nowhere explicitly defines 'rational reconstruction', it is clear that he means the construction of what he calls an 'internal history' in accord with a methodology or logic of discovery. The idea is that the reconstructor has a certain normative methodology or theory of scientific rationality which determines what is selected from the history of science, which is then organized into a narrative obeying the normative rules. As Lakatos writes, "History of *science* is a history of events which are selected and interpreted in a normative way." (p. 121)

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[29] For detailed discussion of this, see Hylton 2007, esp. ch. 9. I am grateful to Erich Reck for pressing me to make this point, and to Andrew Arana for helping me to see how to respond.

[30] See e.g. Quine 1948, 1958, 1966.

What is omitted by internal history is left for 'external history', which explains "the residual non-rational factors" (p. 118) such as social context and psychological motivation. Lakatos talks of the "vital demarcation between normative–internal and empirical–external" (p. 102), which echoes the neo-Kantian distinction between justification and genesis. He also follows the neo-Kantians in privileging the former: "*rational reconstruction or internal history is primary, external history only secondary, since the most important problems of external history are defined by internal history*" (p. 118). Anti-psychologism is thus also a feature of his thought: "subjective factors", he writes, "are of no interest for any internal history" (*ibid*.).

In his endorsement of the neo-Kantian distinction and of anti-psychologism Lakatos clearly follows Popper. Yet unlike Popper, who seems to think that his own logic of discovery gives us *the* logic of discovery, Lakatos is far happier to talk of 'logics of discovery' in the plural. For Lakatos, there can be *different* rational reconstructions, each of which draws its own internal/external distinction in accord with its logic of discovery. This raises the question of how we are to compare and assess them, and Lakatos answers this in the second part of his paper. His objection, in essence, to all earlier rational reconstructions is that they leave too much to external history, in other words, that they render too much of what happens in the history of science as non-rational. On Lakatos' view, a rational reconstruction of science is better the more it reconstructs "actual great science as rational" (p. 132).

According to Popper, the process of generating new theories is not itself rational. Once a theory has been conjectured, it can be rationally tested by attempting to refute it, but the conjecturing is not explicable by a logic of discovery. Popper's concern with falsifying rather than conjecturing leads him to interpret the history of science in a particular way. At any given time a theory may be faced with all sorts of anomalies, which may or may not turn out to be fatal. Popper tries to turn them into 'crucial experiments', Lakatos argues, or else ignores them altogether, thereby distorting the actual history of science. Applied to the history of science, then, Popper's falsificationism falsifies itself, according to Lakatos (pp. 127-8).

At the heart of Lakatos' critique of Popper is the idea that "*all methodologies function as historiographical (or meta-historical) theories (or research programmes) and can be criticized by criticizing the rational historical reconstructions to which they lead*" (p. 122). This idea is applied in making similar criticisms of 'inductivist'

and 'conventionalist' methodologies. His own methodology of scientific research programmes, he then goes on to argue (pp. 131-6), offers the prospect of better rational reconstructions of science. The details need not concern us here. What is important is the greater space he opens up for internal history.[31] Although Lakatos denies that there are any 'hard' or 'neutral' historical facts to which independent appeal can be made (cf. p. 120), he still assumes that actual history acts as the constraint on rational reconstructions and as the arbiter in assessing rival rational reconstructions. I will return to this in the final section.

4.3 Rorty's four genres of historiography

The final paper I will consider here is one that Rorty published in 1984, entitled 'The historiography of philosophy: four genres'. This will set the scene for the examples of rational reconstructions discussed in the next section. The four genres Rorty distinguishes are rational reconstruction, historical reconstruction, *Geistesgeschichte* and doxography. As Rorty describes it, rational reconstruction treats great dead philosophers "as contemporaries, as colleagues with whom [one] can exchange views" in the search for philosophical truth (p. 49), giving an account of their views "in our terms" in finding out whether what they said was true (p. 54). Historical reconstruction, on the other hand, respects a maxim laid down by Quentin Skinner: "No agent can eventually be said to have meant or done something which he could never be brought to accept as a correct description of what he had meant or done."[32] *Geistesgeschichte* are big sweeping stories that aim at "self-justification in the same way as does rational reconstruction, but on a different scale", working "at the level of problematics rather than of solutions to problems" and giving "plausibility to a certain image of philosophy" (pp. 56-7). *Geistesgeschichte* play a role in canon-formation, while doxography, by contrast, takes a canon for granted and tries to make a given question fit it. Doxography assumes that philosophical positions are eternally available and that different philosophers simply opt for different positions (pp. 62-3).

Rorty criticizes doxography for lacking the courage to alter the canon when

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[31] Cf. Lakatos 1971, p. 116. For more on his positive account, see Lakatos 1970; and for discussion, see esp. Cohen, Feyerabend and Wartofsky 1976.

[32] Skinner 1969, p. 28; quoted by Rorty 1984, p. 50.

new discoveries suggest it (p. 63). But he regards the other three genres as indispensable and as complementing one another (p. 67). There is a certain amount of tension in his account of them, however. In his initial description of rational and historical reconstruction, in rejecting the dilemma that they might be thought to pose, he remarks that "We should do both of these things, but do them separately" (p. 49) Later on, in commenting on the idea that the historical reconstructor is concerned with *meaning*, while the rational reconstructor is concerned with *truth*, he writes:

> The two genres can never be *that* independent, because you will not know much about what the dead meant prior to figuring out how much truth they knew. These two topics should be seen as moments in a continuing movement around the hermeneutic circle, a circle one has to have gone round a good many times before one can begin to do *either* sort of reconstruction. (p. 53, fn. 1)

The interdependence of questions of meaning and truth is now familiar to us from the work of Donald Davidson, as Rorty notes (p. 55, fn. 3); but if this is right, then rational and historical reconstruction cannot be done separately. Rorty's talk of a hermeneutic circle is a far better way to characterize their relationship.

Later still, Rorty suggests that the genre of *Geistesgeschichte* provides a synthesis, in the Hegelian sense, of rational and historical reconstruction. "It is precisely the tension between the brisk Whiggery of the rational reconstructors and the mediated and ironic empathy of the contextualists – between the need to get on with the task at hand and the need to see everything, including that task, as one more contingent arrangement – that produces the need for *Geistesgeschichte*, for the self-justification which this third genre provides." (p. 68) But this third genre in turn, according to Rorty, requires a further genre to keep it honest, in the same way that historical reconstruction keeps rational reconstruction honest (p. 71). This further genre is not doxography but intellectual history, which provides "the ground out of which histories of philosophy grow" (p. 70).

Rorty offers an attractive conception of the relationship between the various genres he distinguishes. Although he does not mention his own *Geistesgeschichte*, the sweeping – and controversial – story he told in *Philosophy and the Mirror of Nature*, published just four years earlier, it is clear that his sympathies lie with this genre. The more competing *Geistesgeschichte* we have, he writes, offering different canon-formations, "the more likely we are to reconstruct, first rationally and then

historically, interesting thinkers" (p. 74). His historiography – or perhaps better, meta-historiography – may itself be self-justificatory, but it offers a way of seeing how rational and historical reconstructions can indeed be synthesized in a grander project, one in which matters of fact still provide a constraint on issues of justification.

5 Rational Reconstructions in Analytic History of Philosophy

In his discussion of rational reconstruction, Rorty gives three examples: the accounts of British Empiricism offered by A. J. Ayer (1936) and Jonathan Bennett (1971) and the interpretation of Kant given by P. F. Strawson (1966). Bennett's and Strawson's works are often cited as paradigmatic rational reconstructions, Strawson's being particularly notorious in attempting to interpret Kant without his transcendental idealism. There have also been rational reconstructions of the views of analytic philosophers themselves. Examples are J. O. Urmson's monograph on philosophical analysis (1956), Michael Dummett's first volume on Frege (1973), Saul Kripke interpretation of Wittgenstein's remarks on rule-following and private language (1982), and Scott Soames' history of analytic philosophy (2003). Others have offered rational reconstructions that bring together the work of analytic and non-analytic philosophers: Robert Brandom, one of Rorty's own students, has done so in constructing an inferentialist tradition linking Leibniz, Kant, Hegel, Frege and Sellars, among others.[33] These have generated a great deal of debate, which has played a major role in encouraging analytic philosophers to take history of philosophy more seriously – inspiring the historical turn that has occurred over the last two decades within at least some parts of the analytic tradition. I shall say something about Dummett and Soames in sections 5.2 and 5.3, respectively. Before that, however, I consider the first example of rational reconstruction in analytic history of philosophy, Russell's book on Leibniz.

5.1 Russell's book on Leibniz

Russell published *A Critical Exposition of the Philosophy of Leibniz* in 1900, at the very time of his rebellion against British idealism. Indeed, it played a crucial role in

[33] See Brandom 2002. This collection of Brandom's essays is notable in including a substantial essay on methodology (ch. 3).

that rebellion, in making him realize the importance of the question of relations.[34] Russell's main concern in his book is to identify what he sees as the five principal premises of Leibniz's philosophy, and to show how they give rise not only to (most of) Leibniz's doctrines but also to inconsistencies. At the beginning of chapter 1, Russell criticizes Leibniz for never finding the time to present his philosophy as a systematic whole. What this then requires in a commentator, he goes on to remark, "is to attempt a reconstruction of the system which Leibniz should have written—to discover what is the beginning, and what the end, of his chains of reasoning, to exhibit the interconnections of his various opinions" (p. 2). Such exposition is then to be followed by criticism – concerned, in particular, to identify inconsistencies. Indeed, Russell argues, exposition and criticism are never really separable, since if inconsistencies are not identified, an expository claim can easily be rejected by citing textual evidence that points to the opposite view (p. 3).

Russell talks merely of 'reconstruction' here, but what he advocates is a paradigm example of rational reconstruction: Leibniz's views, the expression of which is scattered over numerous pieces of writing, are redescribed and reorganized into a system that reveals their logical relations. Russell's approach is further explained in his preface, where he distinguishes two conceptions of history of philosophy, one "mainly historical" and the other "mainly philosophical". The first is concerned with influences, causes, context and the relations between philosophies, while the second is concerned with discovering "the great types of possible philosophies", the examination of which enables us to "acquire knowledge of important philosophic truths" (pp. xv-xvi). In the latter case, Russell writes, "the philosopher is no longer explained psychologically: he is examined as the advocate of what he holds to be a body of philosophic truth. By what process of development he came to this opinion, though in itself an important and interesting question, is logically irrelevant to the inquiry how far the opinion itself is correct" (p. xvi). Like the neo-Kantians and Frege before him, then, Russell draws a sharp distinction between psychological genesis and logical justification, and nails his philosophical colours firmly to the latter.

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[34] Cf. e.g. Russell 1959, p. 48. For an account of his views on relations, see Candlish 2007, ch. 6.

Russell's book on Leibniz received a number of reviews, one of which was by the neo-Kantian Ernst Cassirer.[35] Cassirer commends Russell for the "decisiveness of his systematic interest", which enables him to ask important questions often overlooked in traditional accounts (1902, p. 533). But he criticizes Russell for his focus on identifying contradictions. This assumes that any conflicting views are of equal significance in Leibniz's philosophy, yet they may have been expressed at different points in his intellectual development or in different contexts, such as in response to different pressures or concerns. For Cassirer, there may be 'tensions' in philosophical systems, but this requires historical explanation, not logical condemnation. I will return to this important point in the final section of this paper.

5.2 Dummett's work on Frege

Dummett's first book, *Frege: Philosophy of Language* (1973), was a ground-breaking work: it did much to place Frege's ideas at the forefront of debates in analytic philosophy and to help people see Frege as more than just an influence on Russell and Wittgenstein. But as the title itself indicates, it interpreted Frege as having particular concerns. According to Dummett, Frege was the founder of modern philosophy of language, and his entire interpretation is shaped by his conviction that Frege had sought to develop a theory of meaning. Frege's logicist project is mentioned in the chapters that frame his discussion of topics such as names, sense and reference, truth, and quantification, but little sense is given of the significance it had for Frege. In his preface Dummett says that the book was only intended as the first of two volumes about Frege, the second dealing with his philosophy of mathematics (p. ix). Since this second volume took a further eighteen years to appear, however, a one-sided view of Frege was dominant for quite a while.

Frege: Philosophy of Language is also characterized by a lack of concern with the context in which Frege was writing. Dummett remarks, for example, that the logical theory expounded in Frege's *Begriffsschrift* of 1879 "is astonishing because it has no predecessors: it appears to have been born from Frege's brain unfertilized by external influences" (p. xxxv). It is difficult to imagine a more absurd claim to make

[35] The review occurs in an appendix to Cassirer's own book on Leibniz (1902, pp. 532-41). The review is briefly discussed by Hunter 1993, pp. 407-9.

about an historical event; it is like a biologist reporting a case of spontaneous generation. Frege's notation for quantification may have been new, but his logic clearly depended on the mathematical theory of functions which had been developed earlier in the nineteenth century and which Frege himself had worked on in his *Habilitationsschrift*. Dummett also writes as if Frege single-handedly slew the dragon of psychologism, regarded as characteristic of idealism (cf. e.g. pp. 683-4). But as we saw in §2.1, anti-psychologism was a central feature of neo-Kantianism, which certainly had an influence on Frege.

The historical omissions and distortions in Dummett's reconstruction came under increasing attack. Hans Sluga's work, especially his book of 1980, was notable in this respect. Sluga sought to show just how Frege had been influenced by earlier thinkers, such as Kant and Lotze. The criticisms from Sluga and others had a positive effect on Dummett. He modified his interpretation to some extent, conceding certain points and taking more account of other philosophers (1981, 1991b), and finally, in 1991, published his volume on Frege's philosophy of mathematics (1991a), which is far more sensitive to both the evolution of Frege's thought and the influences upon it.

Dissatisfaction with Dummett's reconstruction was also a motivation for others' concern with Frege, such as Baker and Hacker (1984), Burge (2005), and Weiner (1990). It also motivated my own book on Frege (1996), in which I aimed to show how Frege's philosophy of language developed out of his philosophy of mathematics, doing justice to the evolution of Frege's thinking.[36] Interest in Frege has blossomed over the last forty years, and today we have a much clearer understanding not just of Frege's ideas themselves but also of their place in the history of philosophy. What we have witnessed provides an excellent illustration of Rorty's claim about how historical reconstruction works – and should work – to keep rational reconstruction honest.

5.3 Soames' history of analytic philosophy

In 2003 Scott Soames published *Philosophical Analysis in the Twentieth Century*, a two-volume work billed as a history of analytic philosophy. It has received mixed

[36] For more on Frege's philosophy in context, see the papers in Beaney and Reck 2005, Vol. I.

reviews. The clarity and argumentation of the work have been widely praised, but established scholars have made serious criticisms.[37] The reason is not hard to identify. In Rorty's terms, what we are actually offered is a series of rational reconstructions of certain canonical texts, which steers an uneasy course between doxography and *Geistesgeschichte*, with a lack of historical reconstruction to keep it honest. Soames has a definite story to tell: the Whiggish story of how confusions about modal notions gradually get clarified until light bathes the whole in the work of Kripke. The *Geistesgeschichte* that Soames offers is valuable and instructive, but it is too partial to count as a genuine history of analytic philosophy.

I shall confine myself here to noting two general criticisms, which illustrates the way in which historical reconstruction is needed to keep *Geistesgeschichte* honest. The first concerns the omissions in his account, both local and global. An example of the former is his treatment of Russell's theory of descriptions. No account of the history of analytic philosophy would be adequate without discussion of this paradigm of analysis. Soames devotes a chapter to it, but ignores its main motivation: the problems that Russell's own earlier theory of denoting faced. There has been a great deal of honest toil on all this over the last two decades,[38] but Soames mentions none of it. The most serious global omission is the lack of any discussion of Frege and Carnap. As I see it, there are two main subtraditions of analytic philosophy, the Fregean strand and the Moorean strand.[39] Soames does no justice to the Fregean strand. Frege is written out entirely: the impression is given, for example, that Russell invented logicism (2003, I, p. 193). Carnap is occasionally mentioned in discussing Quine, but given the influence that Carnap had on Quine alone, a proper account is required. A history of analytic philosophy which excludes Frege and Carnap is like a history of neo-Kantianism that ignores the Marburg School or a history of classical Greek philosophy that omits Plato and Plotinus.

This global omission is partly responsible for the second failing, concerning methodology. What is characteristic of the Fregean strand in analytic philosophy is

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[37] See esp. Kremer 2005, Beaney 2006b, Hacker 2006. Cf. also Rorty's review (2005).

[38] See e.g. Hylton 1990, 2005; Linsky and Imaguire 2005.

[39] For more on this, see e.g. Beaney 2007b, 2007c.

the role played by 'explication', to use Carnap's term.[40] This seeks to replace our ordinary vague concepts by rigorously defined concepts. But this explicatory conception of analysis is in some tension with the Moorean conception of analysis, according to which philosophy aims to make clear what we already know, our ordinary concepts taken as essentially reliable and coherent. Soames officially endorses the Moorean conception, emphasizing from the beginning that "philosophical speculation must be grounded in pre-philosophical thought" (2003, I, p. xi). But he says nothing about how this relates to his own methodology. Soames is clearly engaged in rational reconstruction, but this is to have Fregean rather than Moorean methodological sympathies. Soames shows no sensitivity to the tension here. Recognizing the Fregean strand in analytic philosophy might have helped him appreciate this tension, which not only runs through the history of analytic philosophy but is also (unconsciously) reflected in the story that he himself tells. His work is entitled 'Philosophical Analysis in the Twentieth Century', but the concept of analysis, ironically, is not subjected to anything like the critical examination that the concepts of analyticity, apriority and necessity receive. Greater historical and methodological honesty, then, might have allowed Soames to live up to what was promised in the title of his work.[41]

6 Rational Reconstruction and Dialectical Reconstruction

We have now considered some key moments in the development of the idea of rational reconstruction, a development that proceeded alongside the development of analytic philosophy itself, both feeding and in turn being fed by that broader development. In discussing these moments, we have also raised various philosophical, methodological and historiographical issues. In this concluding section, I want to draw the threads together, first, in summarizing the story told about the development of the idea of rational reconstruction, and second, in proposing a healthy methodology for analytic history of philosophy, which I call 'dialectical reconstruction', which incorporates but is not exhausted by rational reconstruction.

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[40] For Carnap's classic account, see Carnap 1950, ch. 1. I discuss explication and its roots in Frege's work in Beaney 2004.

[41] For fuller discussion of my objections to Soames' work, see Beaney 2006b.

6.1 The story of rational reconstruction

The idea of rational reconstruction, as it developed in twentieth-century analytic philosophy, has two main roots, neo-Kantianism and logicism. From the first came the distinction between discovery and justification (genesis and validation), with the emphasis on justification; from the second came a model for rational reconstruction. The two influences came together in Carnap's *Aufbau*, where the term 'rational reconstruction' was first used. For Carnap, this meant abstracting from the genesis and subjective content of our experiences and ordering the resultant concepts by means of their logical relations. Both Popper and Reichenbach recognized the idea as crystallizing anti-psychologistic methodology, wherever the context of justification is paramount, although Popper was hesitant about using the term himself, given his rejection of all concern with processes of discovery.

After the Second World War, the idea of rational reconstruction received both criticism and further development. Quine objected to Carnap's epistemological conception (as he understood it), as he sought to re-psychologize epistemology, but at the same time he continued the Russellian project of using logical reconstruction for ontological purposes. Lakatos' work showed how the idea had become established in history of science, and offered a more sophisticated conception – via his idea of 'internal history' normatively governed – that improved on those of his predecessors. Rorty's discussion of historiography showed how the idea had informed work in history of philosophy, especially of the analytic variety.

This raises the question of whether we can really speak of *one* notion of rational reconstruction here. If we can, then the following might be offered as the definition that best captures all of its uses:

> A rational reconstruction of a (purported) body of knowledge or conceptual scheme or set of events is a redescription and reorganization of that body or scheme or set that exhibits the logical (or rational) relations between its elements.

Of course, it is open to us to distinguish different notions here, but I would prefer to think of the *object* of rational reconstruction as varying – whether it be a (purported) body of knowledge, conceptual scheme or set of events. We can then make sense of

the idea as coming to apply to a greater range of things as it developed. This, I think, is what happened as analytic philosophy itself developed.

6.2 Dialectical reconstruction

Rational reconstructions have been offered throughout the history of analytic philosophy, from Russell's book on Leibniz to Soames' recent two-volume work. These have an important role to play in making us aware of the logical relations between the views a philosopher holds and facilitating assessment of the validity and soundness of their arguments. As part of a *Geistesgeschichte*, they can also provide exciting (even if controversial) new readings of the history of philosophy. In so far as the views reconstructed are *ascribed* to the relevant philosopher (and are not merely 'prompted' by a reading of their work),[42] however, the ascription must be constrained by the actual history. In Rorty's terms, historical reconstruction is always required to keep rational reconstruction honest. The history of the reception of rational reconstructions, and the historical turn that has recently taken place within the analytic tradition, provides evidence that this is just what happens.

According to Rorty, rational and historical reconstruction "should be seen as moments in a continuing movement around the hermeneutic circle, a circle one has to have gone round a good many times before one can begin to do *either* sort of reconstruction" (quoted in §4.3 above). I think this is right, although I see more possibility of a genuine synthesis of the two than does Rorty. In *Frege: Making Sens*e, I called the requisite synthesis *dialectical reconstruction* (1996, pp. 3ff.). This is an appropriate term to use not just because it suggests the interplay between rational and historical reconstruction that must continually go on in doing good history of philosophy. It also alludes to a further feature that I regard as important, namely, sensitivity to the dynamic development of a philosopher's thought. Cassirer made this point in his review of Russell's book on Leibniz: it is often tensions between concepts or positions that drive philosophical thinking, and these need to be elucidated and explained in any satisfactory history.

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[42] A classic example of this is Kripke's reading of Wittgenstein's remarks on rules and private language. Kripke was quite open in presenting the argument "as it struck me" (1982, p. viii), an attitude that led to the 'philosopher' interpreted being called 'Kripkenstein' rather than Wittgenstein.

The interplay between rational and historical reconstruction is manifested in various ways. We have noted how historical reconstruction has actually worked to keep rational reconstruction honest – as in the case of responses to Dummett's first book on Frege. Lakatos' account of how the distinction between internal and external history varies according to the logic of discovery advocated is also a sign of the negotiated nature of the relationship here. We have seen, too, how historical considerations come in even where one might least expect it: in the work of paradigm rational reconstructors who themselves officially repudiate such considerations. Frege is the obvious example. As noted in §2.2, what I call 'historical elucidation' plays a crucial role in motivating Frege's concepts and doctrines.

As far as the second feature of dialectical reconstruction is concerned, drawing attention to apparent inconsistencies in a philosopher's views is only the starting-point for proper history of philosophy: we must embed an explanation of those inconsistencies, whether real or apparent, in a contextualized account that is sensitive to all the concerns and pressures that shaped their views. As chapters in a history of analytic philosophy, a good account of Russell's theory of descriptions, for example, must show how that theory developed out of Russell's concern to solve the problems faced by his earlier theory of denoting, just as a good account of Frege's distinction between *Sinn* and *Bedeutung* must see it as motivated by the problems he recognized in his earlier notion of content, in the context of his logicist project. To write good history of philosophy in offering a dialectical reconstruction, then, we must *think through* the problems as they were faced by the philosophers studied. If we do this, it seems to me, then the dilemma posed at the beginning of this paper is automatically dissolved.

Does this mean that the distinction between discovery and justification is also dissolved? Does dialectical reconstruction commit the genetic fallacy? In response, we must recognize that genetic processes, too, can be reconstructed: some motivations are inevitably going to be judged as more significant than others, in accord with the relevant normative theory. Furthermore, the actual history of philosophy – as of anything else – is itself a genetic process, so must be understood as such. Of course, how someone comes to write a history of philosophy, or makes the 'discoveries' about it that they narrate, may be irrelevant to that history itself: it depends on how closely they tracked the ideas they were attempting to think through. But imparting

some sense of the development of philosophical thinking will be essential in any dialectical reconstruction. A more controversial question is whether philosophy itself, and not just history of philosophy, has an essentially historical dimension. I think it does, and I hope I have made this plausible by providing an illustration of dialectical reconstruction in offering an account of the important methodological idea of rational reconstruction in the present paper. Whatever the adequacy or usefulness of that account may be, however, I hope I have at least shown the possibility of combining both good analytic philosophy and good history of philosophy.[43]

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